202206UECM1404OE4b

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Review of preview

Started on	Thursday, 8 September 2022, 11:31 AM
Completed on	Thursday, 8 September 2022, 11:31 AM
Time taken	9 secs
Grade	**0** out of a maximum of 10 (**0**%)

1
Marks: 1

An annuity-immediate has payments of 1,000, 5,000 and 7,500 at the end of one, two and three years, respectively. Determine the convexity of the payments evaluated at i = 9%. ______

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 7.44613

Marks for this submission: 0/1.

2
Marks: 1

A liability consists of a series of 15 annual payments of 36,000 with the first payment to be made one year from now. The assets available to immunize this liability are 6-year and 12-year zero-coupon bonds. The annual effective interest rate used to value the assets and the liability is 7.0%. The liability has the same present value and duration as the asset portfolio. Calculate the amount invested in the 6-year zero-coupon bonds. ______

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 286446.26

Marks for this submission: 0/1.

3
Marks: 1

The one-year spot rate is 7.8%. A two year 600 bond maturing at par, with 5% annual coupon, is currently selling for its par value. Detrmine the two-year spot rate. ______

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 0.05348

Marks for this submission: 0/1.

4
Marks: 1

The yield rate on a one year zero-coupon bond is currently 5% and the yield rate on a two year zero-coupon bond is currently 6%. The treasury plans to issue a two year bond with 7% annual coupons, maturing at 100 par value. Determine the yield to maturity of the two year coupon bond. ______

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 0.0597
Marks for this submission: 0/1.

5
Marks: 1

The following are the prices of 100 zero-coupon bonds redeemable at par:

Term to Maturity	Price
1	94.52
2	89.72
3	84.75
4	79.43

Determine the one-year forward rate deferred 3 years. ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 0.067138
Marks for this submission: 0/1.

6
Marks: 1

A 1000 par value bond with 7% annual coupons matures at par in 4 years. The following are given as the one-year forward rates deferred year n:

	${}_1f_n$	
n	Scenario X	Scenario Y
0	7%	8%
1	6%	6%
2	6%	7%
3	9%	4%

Scenario X and Scenario Y have an equal probability of occurring. Calculate the expected present value of the bond payments. ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 1012.45
Marks for this submission: 0/1.

7
Marks: 1

A perpetuity-immediate has annual payments of 1.11, 1.11^2, 1.11^3,.... Determine the duration of this perpetuity at an effective rate of 22%. ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 11.090909
Marks for this submission: 0/1.

8
Marks: 1

A company makes a loan and receives level annual repayments from the borrowers at the end of each year for 12 years. The effective rate of interest is 7.18%. What is the modified duration of the loan repayments? ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 5.302435
Marks for this submission: 0/1.

9
Marks: 1

An investment will return 3,000 in two years and 5,000 in five years. Determine the ratio of the convexity of the payments to their modified duration, evaluated at i = 5.6%. ______

Answer:

Make comment or override grade

Incorrect
Correct answer: 5.0558

Marks for this submission: 0/1.

10
Marks: 1

A company must make payments of 40 annually in the form of a 10-year annuity-immediate. It plans to buy two zero coupon bonds to fund these payments. The first bond matures in 2 years and the second bond matures in 9 years, and both are purchased to yield 12% effective. What face amount of 9-year bond should the company buy in order to be immunized from small changes in the interest rate? ______

Answer: ✗

Make comment or override grade

Incorrect
Correct answer: 231.406975

Marks for this submission: 0/1.